

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN  
SOUTHERN DIVISION**

*Walters v. City of Flint et al.,*

No. 5:17-cv-10164

Hon. Judith E. Levy

Mag. Elizabeth A. Stafford

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**BELLWEATHER PLAINTIFFS' MOTION IN LIMINE TO PRECLUDE  
CERTAIN ATTACKS ON BONE-LEAD SCANS OR THE PXRF DEVICE**

Bellwether Plaintiffs respectfully submit this motion in limine to exclude any evidence, testimony, or argument attacking bone-lead testing that either (1) purports to raise concerns about the safety of bone-lead testing or the pXRF device or (2) any attack that is not supported by admissible expert testimony. For the reasons stated in the accompanying brief, Plaintiffs respectfully request the Court exclude any evidence or testimony making such attacks not supported by valid expert testimony. Further, Plaintiffs respectfully request that the Court preclude any argument based on those attacks in Defendants' opening statements.

As Local Rule 7.1(a) requires, Plaintiffs conferred with the VNA Defendants and LAN Defendants about this motion. Counsel for both groups of Defendants said they would oppose the motion.

Dated: December 14, 2021

Respectfully submitted,

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**BELLWEATHER PLAINTIFFS' BRIEF IN SUPPORT OF THEIR MOTION  
IN LIMINE TO PRECLUDE CERTAIN ATTACKS ON BONE-LEAD  
SCANS OR THE PXRF DEVICE**

**INTRODUCTION**

Bellwether Plaintiffs (“Plaintiffs”) respectfully request the Court exclude any evidence or testimony attacking bone-lead testing or the portable x-ray fluorescence (“pXRF”) device that (1) raises alleged safety or human rights concerns, (2) asserts Dr. Specht’s testing is unauthorized, (3) is not relevant to the accuracy of bone-lead testing, or (4) is otherwise not supported by valid expert testimony. Some of these attacks were made in VNA’s motion to exclude Dr. Aaron Specht under *Daubert*, in which it invoked unauthorized testing, human rights violations including the Tuskegee Experiments, and misuse of industrial devices. *See* VNA Motion to Exclude Dr. Specht (ECF No. 343), at 25–26.

As VNA’s *Daubert* motion thus shows, any such evidence or testimony would be irrelevant and calculated to inflame the jury. Indeed, the Court rejected those

attacks as “plainly irrelevant.” *See* Opinion and Order Denying VNA’s Motion to Exclude the Testimony and Report of Dr. Aaron Specht (“Specht Order”) (ECF No. 447), at 17 n.2.

Notwithstanding the Court’s order, Plaintiffs suspect that Defendants may assert the same, irrelevant attacks on bone–lead testing and the pXRF device at trial,<sup>1</sup> and the Court should exclude them: They would not make any fact of consequence—whether Plaintiffs were lead-poisoned—any more or less probable at all. Even if Defendants’ attacks are taken at face value—and there are plenty of good reasons not to—they do not bear on any finding of fact the jury could make. To take VNA’s chief example head on: Bone-lead testing is safe, including when measured with the pXRF device; but even if it weren’t, that would not bear on whether a bone-lead sample taken using the pXRF device is accurate.

As a result, any attacks on bone–lead testing or the pXRF device apart from its ability to generate an accurate measurement of lead in Plaintiffs’ bones are irrelevant. Furthermore, whatever faint and hypothetical probative value VNA may claim such attacks could have is substantially outweighed by the glaring undue prejudicial effect those attacks may have and the likelihood of confusing and

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<sup>1</sup> To be clear, Plaintiffs expect that Defendants will permissibly cross-examine Dr. Specht and present their own contrary expert testimony to argue that Plaintiffs’ bones do not contain a significant amount of lead and that the pXRF device is not a reliable measurement tool.

misleading the jury. If Defendants inject these matters in this case through a party, an attorney, or a witness, they will cause irreparable harm that no jury instruction could cure.

Accordingly, it should be excluded under Federal Rules of Evidence 401, 402, and 403. Correspondingly, the Court should preclude VNA and LAN (collectively, where appropriate, “Defendants”) from making any argument in opening statements regarding the safety of bone–lead testing or the pXRF device or any other topic that is not relevant to the pXRF device’s accuracy or that will not ultimately be supported by valid expert testimony.

## **BACKGROUND**

Each Plaintiff suffers from lead poisoning resulting from exposure to lead-containing Flint water during the Flint Water Crisis. One method of showing that Plaintiffs have been exposed to lead is to measure the lead which has accumulated in their bones using pXRF testing. Plaintiffs have retained Dr. Aaron Specht, a medical physicist whose preeminent qualifications Defendants have not challenged. Dr. Specht can reliably measure the amount of lead in a child’s tibia as a way of determining whether the child has had a long-term, cumulative exposure. Here, Dr. Specht measured Plaintiffs’ bone–lead and found that each Plaintiff has had a “substantial exposure.” Ex. 1, Specht Report, at 14, 16–20.

VNA challenged Dr. Specht's testing under Rule 702 and *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993).<sup>2</sup> See VNA Motion to Exclude Dr. Specht (ECF No. 343), at 25–26. One aspect of VNA's challenge to Dr. Specht's testing was a claim that his method is unauthorized, not safe, not approved for diagnostic purposes, or is otherwise suspicious. See VNA Motion to Exclude Dr. Specht (ECF No. 343), at 25–26. Ostensibly, VNA made that argument in the context of one particular factor under *Daubert*: Whether bone–lead testing is generally accepted in the relevant scientific community. See *id.*

Yet, the salaciousness of VNA's argument and sources it quoted manifested an intent to inject prejudicial information:

Several prominent Flint pediatricians have also voiced significant concerns about Dr. Specht's pXRF testing, further demonstrating its lack of general acceptance. Dr. Mona Hanna-Attisha was one of the first people to raise concerns over lead exposure from the Flint water crisis. She recently spoke out against the use of pXRF devices on children in Flint, stating that “[f]or so long, the people of Flint have felt, you know, experimented on, and rightly so, and this is another example of this injustice—where something is being applied on them that is not tested, that has not been approved.” She further explained that “[b]one scans are never a good idea for children” and that “[h]owever minimal the risk [from radiation] there is no benefit” because bone scans provide no information about where the lead came from or when.

*Id.* at 25.<sup>3</sup>

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<sup>2</sup> LAN joined VNA's challenge but did not file its own separate motion.

<sup>3</sup> Quoting Ron Forger, *Flint Pediatrician Who Blew the Whistle on Water Crisis Won't Recommend Bone Scans for Kids*, Mlive (Mar. 15, 2021), <https://bit.ly/3nJkLk8>.

VNA didn't stop there:

Dr. Lawrence Reynolds has voiced similar concerns. Dr. Reynolds has been a pediatrician in Flint for many decades and served on the Flint Water Advisory Task Force. Dr. Reynolds stated that “[u]se of this unapproved industrial device to perform a bone scan on live humans . . . is at best[] unauthorized research.” He noted that it is not “part of an approved diagnostic procedure” or “a proven beneficial treatment protocol, especially for children,” and it is “not an approved practice by any global regulatory agency or professional body.” In fact, he explained, the “XRF hand held device is not designed to be used on human beings—at all.” Dr. Reynolds concluded that Dr. Specht’s pXRF testing is an “unauthorized/unsupervised research project” “masquerading as an accepted medical procedure.” He even went so far as to call Dr. Specht’s pXRF testing “a human rights violation . . . the Tuskegee experiment all over again.”

*Id.* at 26.<sup>4</sup>

The Court denied its motion, concluding that Dr. Specht’s testing is reliable and that he may testify at trial. *See* Specht Order (ECF No. 447), at 8–18. Indeed, the Court flatly rejected VNA’s allegedly safety-based attacks as “plainly irrelevant.” *Id.* at 17 n.2 (“VNA also cites to media reports and the reactions of a local medical doctor in Flint. These citations are plainly irrelevant to the general acceptance of pXRF technology in the relevant scientific community.”). Ultimately,

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<sup>4</sup> Citing and quoting Objections of Dr. Lawrence A. Reynolds, M.D., FAAP Regarding the Proposed Flint Water Settlement Agreement, Flint Water Litig., No. 16-cv-10444 ECF No. 1436, PageID.55021-55050; and Ron Forger, *Flint Mayor’s Health Advisor Calls Water Settlement Bone Lead Testing “A Human Rights Violation,”* Mlive (Mar. 1, 2021), <https://bit.ly/3xEZMTW>.

the Court concluded that pXRF is generally accepted and reliable, passing muster under *Daubert* and its progeny. *Id.* at 8–18.

Dr. Specht is not the only expert who will testify at trial about bone–lead testing. VNA has retained two experts who will offer some opinion on bone–lead testing or the pXRF device: Dr. John Gaitanis and Dr. Brent Finley.<sup>5</sup> While Dr. Finley disputes the accuracy and reliability of pXRF testing, he did not mention either in his report or at his deposition that he has any other opinion about it. *See Ex. 2, Finley Bellwether Report*, at 79–92. For example, he does not have an opinion about the pXRF device’s safety. *See id.*

Dr. Gaitanis’s reports do include some language that could conceivably suggest that he may have an opinion regarding the pXRF device’s safety. He argues, for example, that “pXRF has not been properly vetted for use in humans” and “has no role in medical practice.” *See Ex. 3, Gaitanis Report (E.S.)*, at 8–9; *Ex. 4, Gaitanis Report (A.T.)*, at 5–6; *Ex. 5, Gaitanis Report (D.W.)*, at 5–6; *Ex. 6, Gaitanis Report (R.V.)*, at 7–8. Yet, a close reading of Dr. Gaitanis’s opinion as stated in his reports reveals they are a general attack on pXRF’s reliability and general acceptance rather than a separate argument that it isn’t safe.

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<sup>5</sup> LAN has not independently retained any expert witness on the issue of bone–lead testing.

However, when he was asked if he had any new opinions following his original report based upon supplemental materials he disclosed prior to his deposition, Dr. Gaitanis testified:

You'll see from the – I'll speak again towards the portable XRF device too, but I do include one paper here regarding the effect of radiation on long bones.

Now, this was regarding radiation therapy for kids who had cancer. So, it's a much higher – admittedly much higher radiation dose than the portable XRF device would apply. But I pulled that up because I just wanted to understand what the potential effect of radiation is upon long bones.

So, the portable XRF was being applied. We are looking at fibular measurements, and that is a long bone that is still growing in these children.

And that paper did instruct me that there is potential to cause sclerosis at the metaphyseal plate and therefore affect bone growth over time with sufficient amounts of radiation exposure. So, that would – that speaks more to the potential risk of the device itself.

*See Ex. 7, Gaitanis Dep. Excerpts, at 107:12–108:13.*

Plaintiffs' counsel followed up and asked whether this meant Dr. Gaitanis was offering a new opinion, and Dr. Gaitanis denied offering any such new opinion: He explained that he has “no new opinions” and that any supplemental materials “either enhanced my degree of certainty in those [previous] opinions or not changed – you know, at least at a minimum not changed them.” *See id.* at 109:5–19. Indeed, despite the above passage of Dr. Gaitanis’s deposition, each of his reports boast that KXRF testing is a “superior technique,” and Dr. Gaitanis does not raise any concerns about

the radiation from KXRF testing in his reports. *See, e.g.*, Ex. 3, Gaitanis Report (E.S.), at 9.

To be sure, bone–lead testing *is* safe. The x-rays from the pXRF device “give a small radiation exposure, which is equivalent to that of standing outside for about 9 hours with natural cosmic sources of radiation or equivalent to 1/3rd of a single dental x-ray.” Ex. 1, Specht Report, at 6 (citing A.J. Specht & X. Zhang et. al., *A Dosimetry Study of Portable X-ray Fluorescence in Vivo Metal Measurements*, 116(5) Health Phys. 590-98 (2019)).

## **ARGUMENT**

**I. The Court should preclude Defendants from offering any testimony or evidence attacking bone–lead testing or the pXRF device not supported by admissible expert testimony.**

**A. Motions in limine obviate the risk of prejudicial evidence or arguments being presented to the jury.**

“Motions in limine are meant to ‘prepare a smooth path for trial—particularly by casting aside inadmissible evidence that might confuse or prejudice the jury.’” *Verburg v. Weltman, Weignberg & Reis Co., L.P.A.*, 295 F. Supp. 3d 771, 773 (W.D. Mich. 2018) (quoting *Dixon v. Grand Trunk W. R.R. Co.*, No. 2:13-14340, 2017 U.S. Dist. LEXIS 185001, 2017 WL 5166868, at \*1 (E.D. Mich. Nov. 8, 2017)). Whether to grant a motion in limine is a matter of discretion for the district court. *Louzon v. Ford Motor Co.*, 718 F.3d 556, 560 (6th Cir. 2013).

Additionally, a motion in limine is a useful way to prevent prejudicial references to potential evidence, which would ultimately be inadmissible, during opening statements. “An opening statement is designed to allow each party to present an objective overview of the evidence intended to be introduced at trial.” *United States v. Burns*, 298 F.3d 523, 543 (6th Cir. 2002). “It is not appropriate for a [litigant] to ‘use the opening statement to poison the jury’s mind . . . or to recite items of highly questionable evidence.’” *Id.* at (quoting *United States v. Brockington*, 849 F.2d 872, 875 (4th Cir. 1988)); *see also United States v. Taren-Palma*, 997 F.2d 525, 532 (9th Cir. 1993) (“Opening argument, like closing, should not refer to matters that are not to be presented as evidence.”). Limiting a party’s opening statement is a matter of discretion for the district court. *Burns*, 298 F.3d at 543.

**B. Irrelevant evidence is inadmissible under Rule 402, and a district court should exclude unduly prejudicial evidence under Rule 403.**

Only relevant evidence is admissible. Fed. R. Evid. 402. Evidence is “relevant” when “it has any tendency to make a fact more or less probable than it would be without the evidence” and “the fact is of consequence in determining the action.” Fed. R. Evid. 401.

Even when evidence is admissible, Federal Rule of Evidence 403 permits a court to exclude evidence or testimony “if its probative value is substantially outweighed by a danger of . . . unfair prejudice, confusing the issues, [or] misleading

the jury . . . .” ““Unfair prejudice,’ as used in Rule 403, . . . refers to evidence which tends to suggest decision on an improper basis.” *United States v. Sherrill*, 972 F.3d 752, 765 (6th Cir. 2020). An “improper basis” is “commonly, though not necessarily, an emotional one.” *United States v. Hathaway*, 798 F.2d 902, 909 (6th Cir. 1986).

**C. The Court should not permit any evidence or testimony attacking bone–lead testing in general or the pXRF device in particular unless it is supported by a valid expert opinion.**

The Court should exclude any evidence, testimony, or argument attacking bone–lead testing in general or the pXRF device in particular if it (1) raises alleged safety or human rights concerns, (2) asserts that Dr. Specht’s testing is unauthorized, (3) is not relevant to the accuracy of Plaintiffs’ bone–lead measurements, or (4) is not relevant to or supported by a valid expert opinion.

Here, Dr. Finley and Dr. Gaitanis both have certain opinions about bone–lead testing, Dr. Specht’s testimony, and the pXRF device. Generally speaking, these opinions appear to relate to whether bone–lead testing conducted with the pXRF device produces an accurate measurement that will be helpful to a jury in determining whether Plaintiffs were lead poisoned. *See Ex. Ex. 2, Finley Bellwether Report*, at 79–92; *Ex. 3, Gaitanis Report (E.S.)*, at 8–9; *Ex. 4, Gaitanis Report (A.T.)*, at 5–7; *Ex. 5, Gaitanis Report (D.W.)*, at 5–6; 14, 16–20; *Ex. 6, Gaitanis Report (R.V.)*, at 7–8. Dr. Finley has no opinion about the safety of pXRF bone–lead testing. Although Dr. Gaitanis has some arguably stray language touching on extraneous

issues like the safety of the pXRF device, taken as a whole his reports do not offer any such opinion.

To the extent that some particular lines of Dr. Gaitanis's deposition testimony (based upon supplemental materials not included in his expert report) appear to contemplate a new and additional opinion regarding the safety of bone-lead testing when conducted with pXRF device, *see* Ex. 7, Gaitanis Dep. Excerpts, at 107:12–108:13, he disclaimed any such new opinion a moment later in the deposition, *id.* at 109:5–19. Moreover, that opinion is at odds with Dr. Gaitanis's attempt to bolster the reliability of KXRF testing in his reports. *See, e.g.,* Ex. 3, Gaitanis Report (E.S.), at 9. Notably, he did not raise any concerns about the safety of KXRF testing there.

Therefore, unless evidence or testimony hews to one these experts' opinions, which concern only the accuracy and reliability of bone-lead testing using the pXRF device, it is not relevant to any "fact . . . of consequence in determining action" in that it does not have "any tendency to make [any material] fact more or less probable." Fed. R. Evid. 401. In point of fact, even Dr. Gaitanis's belated non-opinion is itself "plainly irrelevant" to any material fact in issue.<sup>6</sup> Cf. Specht Order, at 17 n.2. Whether pXRF bone-lead testing is unsafe because of small amounts of

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<sup>6</sup> Even Dr. Gaitanis admitted that the study he cited involved a "much higher radiation dose than the portable XRF device would apply." Ex. 7, Gaitanis Dep. Excerpts, at 107:23–24. The study, then, does not even really contradict Dr. Specht's opinion that pXRF testing is safe and that the radiation dose is low.

radiation has no bearing on whether use of the pXRF device to measure bone–lead is accurate, reliable, or generally accepted in the relevant scientific community. This is all the more true for the “media reports and . . . reactions of a local medical doctor” VNA cited in its *Daubert* motion. *See id.* After all, the **only** trial issues bone–lead testing can conceivably relate to are Plaintiffs’ lead poisoning and exposure to lead.

Furthermore, even if there is some distant, tangential relevance to the alleged safety, human rights, and authorized use concerns VNA and other parties have made when attacking pXRF testing, the risk of undue prejudice, confusing the issues, misleading the jury, and creating a substantial delay that will waste time during what will almost certainly be an already lengthy trial. For instance, any inquiry into whether Dr. Specht’s testing is “authorized” by the Thermo Fisher Corporation risks creating a mini-trial into the circumstances surrounding his testing and use of it over the last decade. Such a mini-trial would not just waste time; it would distract and confuse the jury, possibly leading the jury to determine Plaintiffs were not really lead poisoned if Dr. Specht’s testing was unauthorized.

Most importantly, it is highly prejudicial to tell a jury presented with complex scientific evidence documenting a child’s lead exposure that the child was perhaps radiation-poisoned in getting scanned. It risks misleading the jury and confusing the

issue as to what “really” poisoned the child.<sup>7</sup> Of course, it goes without saying that calling Dr. Specht’s testing a “human rights violation” along the lines of the “Tuskegee experiment” is seriously inflammatory. In other words, attacking bone-lead testing and/or the pXRF device as unsafe—particularly for use in children—poses a grave risk of permitting the jury to render a verdict on an “improper” and “emotional” basis—precisely what Rule 403 forbids. *See Sherrill*, 972 F.3d at 765; *Hathaway*, 798 F.2d at 909.

Finally, especially with regard to Dr. Gaitanis’s testimony based upon supplemental materials, the fact that some of these theories may be presented using experts as a mouthpiece is, in truth, worse. An expert’s unfounded speculation has a unique capacity to mislead and confuse the jury. As the Supreme Court recognized in *Daubert*: ““Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it. Because of this risk, the judge in weighing possible prejudice against probative force under Rule 403 of the present rules exercises more control over experts than over lay witnesses.”” *Daubert*, 509 U.S. at 595 (quoting Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound; It Should Not Be Amended*, 138 F.R.D. 631, 632 (1991)).

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<sup>7</sup> Additionally, Plaintiffs would be required to rebut the testimony by showing that pXRF testing is in fact safe. Doing so would needlessly add to an already lengthy trial. As above, the *only* issue bone-lead testing can relate to is whether Plaintiffs were exposed to lead. It goes without saying that bone-lead testing itself is not an issue for trial.

As a result, Defendants should not be permitted to argue or offer evidence or testimony attacking bone–lead testing that (1) raises alleged safety or human rights concerns, (2) asserts that Dr. Specht’s testing is unauthorized, (3) is not relevant to the accuracy of Plaintiffs’ bone–lead measurements, or (4) is not relevant to or supported by a valid expert opinion. Defendants are certainly allowed to cross-examine Dr. Specht about matters relevant to whether his testing produces an accurate measurement of bone–lead and to present contrary testing bearing on that issue. But they must not be permitted to introduce speculative and highly prejudicial evidence and arguments attacking bone–lead testing and the pXRF device that lack adequate expert support and, at any rate, can only serve to prejudice and inflame the jury.

### **CONCLUSION**

Accordingly, Plaintiffs respectfully request that the Court grant this motion in limine and preclude Defendants from offering evidence or testimony attacking bone–lead testing or the pXRF device that does not bear on the accuracy of Plaintiffs’ bone–lead measurements or which is not supported by a valid expert opinion. Further, Plaintiffs respectfully request that the Court preclude Defendants marking any argument attacking bone–lead testing or the pXRF device during opening statements.

Dated: December 14, 2021

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I, Renner K. Walker, hereby certify that on December 14, 2021, the foregoing motion and brief, as well as the attached exhibits, were served on all counsel of record via the Court's ECF filing system.

/s/ Renner K. Walker  
Renner K. Walker